

**REMARKS UNDER 37 CFR § 1.111**

**Formal Matters**

Claims 14-15 and 18-41 are pending after entry of the amendments set forth herein.

Claims 14-15 and 18-37 were examined. Claims 14-15, 18-23, 25-30, 32-33 and 35-37 were rejected. Claims 24, 31 and 34 were objected to but indicated to contain allowable subject matter.

Applicants respectfully request reconsideration of the application in view of the amendments and remarks made herein.

No new matter has been added.

**The Office Action**

**Claims Rejected Under 35 U.S.C. Section 102(b) – (Chaux)**

In the Official Action of January 10, 2007, claims 14, 15, 19-23, 25-30, 32-33 and 35-37 were rejected under 35 U.S.C. Section 102(b) as being anticipated by Chaux, U.S. Patent No. 4,852,552. The Examiner asserted that Chaux discloses a device comprising a housing (26), a first arm (12) having a rib engaging blade (22, 24), second arm (10) having a rib engaging blade (18, 20), a mechanism comprising a rack bar (8) between arms and crank (16), at least the portion (14) being contained in the housing (26). The Examiner further asserted that Chaux discloses in Fig. 6, that as the second arm (10) moved away from the first arm (12) in a transverse direction parallel to the housing also move[s] the engaging blade (18,20) upward direction different from the transverse direction.

Applicants respectfully traverse. It is respectfully submitted that the ratcheting mechanism 8, 14,16 of Chaux clearly does not move the retractor blade 22 upward, contrary to the Examiner's assertion. Chaux discloses at column 4, lines 54-56, that when the retractor is in place, the surgeon tilts the retractor so that the movable arm is slightly raised. Accordingly, the ratchet mechanism does not perform this raising. The ratchet mechanism can only drive the spreader arm 28 and blade 20 in a translational direction relative to spreader arm 34 and blade 24. Accordingly, it is respectfully submitted that the ratchet mechanism of Chaux cannot drive the arm members in a first translational direction and also drive the blade in an upward direction different from the first translational direction. Any upward

movement is along the path of the first translational movement and is the result of the surgeon tilting the retractor.

To further clarify this distinction, Applicants have amended claim 14 above to clearly recite two distinct driving directions. As Chaux clearly drives along only one driving direction, it is respectfully submitted that Chaux clearly fails to anticipate claim 14 and claims depending therefrom.

With regard to claim 19, the Examiner asserted that second arm (10) is rotatably mounted with respect to the mechanism via rotatable member (28). The Examiner further asserted “As the member (28) being rotated during use the engaging blade rotated.” This statement was not understood by Applicants and Applicants request clarification. Further, Applicants note that the arm (10) of Chaux is not rotatable during use, as Chaux clearly discloses at column 3, lines 32-33 that this part is normally locked against rotation.

Regarding claim 20, the Examiner asserted that as the second arm (10) moved away from the first arm (12) in a transverse direction parallel to the housing also move the engaging blade (18,20) upward direction different from the transverse direction. Applicants respectfully traverse. The engaging blade (18,20) is fixed to arm (28, 10) and therefore is driven in the same translational direction as the arm (28, 10). Applicants have amended claim 20 to further clarify the distinction between the first and second directions.

Regarding claim 21, the Examiner asserted that retractor 65 of Chaux is a support arm adapted to rest against the surface of the body of the patient during driving by the driving mechanism. Applicants respectfully traverse. Chaux discloses that retractor 65 is adapted for use in mitral valve surgery, and is clamped to a post 66. Nowhere does Chaux appear to disclose or suggest that retractor 65 is adapted to rest against the surface of the body during actuation of the ratchet mechanism (14, 16, 8).

Regarding claim 22, the Examiner asserted that the “second arm” is rotated during driving by the driving mechanism of Chaux. However, claim 22 recites that the second arm is rotated with respect to the base portion during driving. It is respectfully submitted that Chaux clearly fails to disclose or suggest this feature.

With regard to claim 23, the Examiner asserted that “the support arm (65) moves with respect to the second arm (10). However, Applicants note that claim 23 recites that the support arm ratchets with respect to the second arm. It is respectfully submitted that the retractor 65 of Chaux does not ratchet with respect to arm 10.

With regard to claim 24, the Examiner asserted that “the support arm (65) comprises a sternal pad or blade at a distal end.” However, Applicants note that claim 24 does not recite anything about a

blade, but recites that the support arm comprises a sternal pad at a distal end thereof. It is respectfully submitted that the retractor 65 of Chaux does not have a sternal pad.

Claim 25 has been amended to more clearly recite the first and second directions in which the second retractor blade is driven. As noted above, the driver of Chaux is a standard rack and pinion drive mechanism that can only drive the arms apart or together along a single translational direction.

Regarding claims 26-28, the Examiner asserted that the “second arm” of Chaux and the blades 18,20 and support arm 65 rotates during lifting. The Examiner referred to column 4, lines 56-66 of Chaux as support for these assertions. Applicants respectfully submit that column 4, lines 56-66 of Chaux do not support the Examiner’s assertions. Column 4, lines 56-66 discloses that the surgeon tilts the retractor so that the movable arm is slightly raised. Thereafter, when the elements of the retractor are moved apart by the rack and pinion, the counterclockwise adjustment of the spreader arms causes the left side 86 of the sternum to be automatically lifted to provide access to the thoracic vascular pedicle 88 for dissection. Because the arms are connected to the rack 8 of Chaux in conventional fashion, the tilting of the retractor by the surgeon does not rotate the second arm relative to the frame, as recited in claim 26. Rather, both the second arm and frame (as well as the first arm) are rotated by this tilting, so that there is no relative rotation between the second arm and the frame.

Regarding claim 29, the Examiner asserted that Chaux provides a support arm (65) rotatably mounted to the base 8 via the rotatable member (28) and the support arm adapted to rest against the surface of the body of the patient during driving. As noted above, Applicants respectfully submit that Chaux does not disclose that the retractor 65 is adapted to be contacted to an external chest wall. Furthermore, claim 29 recites that the support arm transfers lifting force to said second arm. It is respectfully submitted that Chaux clearly fails to disclose or suggest such lifting force transfer.

Claim 32 has been amended to more clearly recite the distinct translation direction and rotational driving of the second blade arm relative to the first blade arm. It is respectfully submitted that it is not possible for the drive mechanism of Chaux to drive arm 10 in rotation relative to arm 12.

Claim 33 has been amended to more clearly recite that the adjusting means adjusts the relative distance between the first and second arms and drives rotations of said first arm relative to said frame. It is respectfully submitted that the drive mechanism of Chaux does not drive a first arm in rotation relative to the frame.

As to claim 36, it is respectfully submitted that the retractor 65 of Chaux does not rest against the surface of a patient’s body during driving by the rack and pinion mechanism. Rather, the retractor is an auxiliary tool that is not used to perform the rib retraction, but is used for mitral valve surgery, once the

chest has been opened.

Claim 37 has been amended to further clarify that the lifting of the retractor blade is relative to the frame as well as to the first retractor blade. It is respectfully submitted that the retractor of Chaux cannot lift either of blades 10 or 12 relative to the frame 8.

In view of the above amendments and remarks, the Examiner is respectfully requested to reconsider and withdraw the rejection of claims 14, 15, 19-27, 25-30, 32-33 and 37-3 under 35 U.S.C. Section 102(b) as being anticipated by Chaux, U.S. Patent No. 4,852,552, as being clearly inappropriate.

#### **Claim Rejected Under 35 U.S.C. Section 103(a) (Chaux in view of Coker)**

Claim 18 was rejected under 35 U.S.C. Section 103(a) as being unpatentable over Chaux, U.S. Patent No. 4,852,552 in view of Coker, U.S. Patent No. 5,363,841. Coker was applied as teaching the use of a retractor having blades with fingers.

Coker does nothing to make up for the deficiencies of Chaux in meeting all of the limitations of claim 14. Accordingly, since claim 18 depends from claim 14, it is respectfully submitted that claim 18 is allowable over Chaux and Coker for at least the same reasons that claim 14 is allowable over Chaux, as described above.

Accordingly, for at least the above reasons, the Examiner is respectfully requested to reconsider and withdraw the rejection of claim 18 under 35 U.S.C. Section 103(a) as being unpatentable over Chaux, U.S. Patent No. 4,852,552 in view of Coker, U.S. Patent No. 5,363,841, as being clearly inappropriate.

#### **Allowable Subject Matter**

Claims 24, 31 and 34 were objected to as being dependent upon a rejected base claim, but the Examiner indicated that these claims would be allowable if rewritten into independent form to include all of the limitations of the base claim and any intervening claims. Accordingly, Applicants have submitted new claims 38-40 above. Claim 38 combines the recitations of claims 20, 21 and 24 (prior to amendments made above). Claim 39 combines the recitations of claims 29, 30 and 31 (prior to amendments made above). Claims 40 combines the recitations of claims 33 and 34 (prior to amendments made above).

New claim 41 depends from claim 29 and further recites that the support arm applied torque

against the external chest wall to maintain lift by said second arm. Support for this amendment can be found at page 36, lines 18-20 of the specification, for example. It is respectfully submitted that Chaux clearly fails to disclose or suggest this feature.

**Conclusion**

Applicants submit that all of the claims are in condition for allowance, which action is requested. If the Examiner finds that a telephone conference would expedite the prosecution of this application, please telephone the undersigned at the number provided.

The Commissioner is hereby authorized to charge any underpayment of fees associated with this communication, including any necessary fees for extensions of time, or credit any overpayment to Deposit Account No. 50-2653, order number G UID-006CON6.

Respectfully submitted,  
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